

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

1. (Previously Presented) A computer system comprising:  
  
    a data store comprising a table of objects and pre-computed values comprising information to discern objects based on type pursuant to a hierarchical search, each object having an associated type in a hierarchy of types, each type having an identifier; and  
  
    a hardware / software interface system for manipulating the plurality of objects and pre-computed values.
2. (Original) The computer system of claim 1, wherein each type is a user-defined type (UDT).
3. (Original) The computer system of claim 1, wherein a type can be a subtype of another type.
4. (Original) The computer system of claim 1, wherein the data store further comprises a type path for each object.
5. (Original) The computer system of claim 4, wherein the data store comprises a computed column for storing each type path.
6. (Original) The computer system of claim 4, wherein each type path comprises a variable-length encoded value.
7. (Original) The computer system of claim 6, wherein each variable-length encoded value corresponds to a hierarchy level of the type of the associated object.
8. (Currently Amended) A hardware / software interface system implemented at least in part by a computing device capable of manipulating a plurality of objects and pre-computed values comprising information to discern objects based on type pursuant to a hierarchical

search, the objects and pre-computed values comprised within a table, each object having an associated type in a hierarchy of types, each type having an identifier.

9. (Original) The hardware / software interface system of claim 8, wherein each type is a user-defined type (UDT).

10. (Original) The hardware / software interface system of claim 8, wherein a type can be a subtype of another type.

11. (Original) The hardware / software interface system of claim 8, wherein each object has an associated type path.

12. (Currently Amended) The hardware / software interface system of claim 11, wherein each type path belongs to a computed column in a data store.

13. (Original) The hardware / software interface system of claim 11, wherein each type path comprises a variable-length encoded value.

14. (Original) The hardware / software interface system of claim 13, wherein each variable-length encoded value corresponds to a hierarchy level of the type of the associated object.

15 – 24. (Canceled)